

CLAIMS:

1. A method of producing a biochemical, comprising the steps of:

- 5            providing a microorganism on a support;  
             positioning said support such that said  
microorganism has access to a first medium providing  
conditions for growth of said microorganism;  
             separating said microorganism from said first  
10           medium; and  
             positioning said support such that said  
microorganism has access to a second medium providing  
conditions for biosynthesis of said biochemical by said  
microorganism.

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2. A method in accordance with claim 1 including the  
step of extracting said biochemical from said second  
medium.

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3. A method in accordance with claim 1 including the  
step of extracting said biochemical from biomass of said  
microorganism.

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4. A method in accordance with claim 2 or claim 3  
including the step of separating said biochemical from an

extract the product of said extracting step.

5. A method in accordance with claim 4 wherein the step of separating said biochemical includes performing high pressure liquid chromatography on said extract.

6. A method in accordance with any preceding claim including the step of controlling delivery of said first medium to said microorganism when said microorganism has access thereto.

7. A method in accordance with claim 6 wherein said step of controlling delivery of said first medium includes the step of regulating a pressure gradient along which said first medium is delivered.

8. A method in accordance with claim 6 or claim 7 wherein said step of controlling delivery of said first medium includes the step of regulating a humidity gradient along which said first medium is delivered.

9. A method in accordance with any of claims 6 to 8 wherein said step of controlling delivery of said first medium includes the step of regulating a concentration gradient along which said first medium is delivered.

10. A method in accordance with any preceding claim including the step of controlling delivery of said second medium to said microorganism when said microorganism has access thereto.

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11. A method in accordance with claim 10 wherein said step of controlling delivery of said second medium includes the step of regulating a pressure gradient along which said second medium is delivered.

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12. A method in accordance with claim 10 or claim 11 wherein said step of controlling delivery of said second medium includes the step of regulating a humidity gradient along which said second medium is delivered.

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13. A method in accordance with any one of claims 10 to 12 wherein said step of controlling delivery of said second medium includes the step of regulating a concentration gradient along which said second medium is delivered.

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14. A method of developing a pharmaceutical product comprising the steps of:

performing the method of any one of claims 1 to 13 in respect of a microorganism under investigation;

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applying mass spectrometry analysis to a sample generated by the method; and

identifying a biochemical component of the sample for further investigation.

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15. A method in accordance with claim 14 comprising the step of:

testing the identified biochemical for pharmaceutical efficacy.

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16. A method in accordance with claim 14 including the step of:

preparing said biochemical for human or animal consumption.

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17. A method of developing an agrochemical comprising the steps of:

performing the method of any one of claims 1 to 13 in respect of a microorganism under investigation;

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applying mass spectrometry analysis to a sample generated by the method; and

identifying a biochemical component of the sample for further investigation.

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18. A method in accordance with claim 17 comprising the

step of:

testing the identified biochemical for agrochemical efficacy.

5 19. A method in accordance with claim 18 including the step of:

preparing said biochemical for agricultural application.

10 20. A method of producing a pharmaceutical product including the steps of:

producing a plurality of samples of biochemicals, each sample being produced by means of the method of any one of claims 1 to 13;

15 testing each sample for pharmaceutical efficacy of the biochemical; and

for a sample of a biochemical showing pharmaceutical efficacy, producing and preparing said biochemical for human or animal consumption.

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21. A method of producing an agrochemical product including the steps of:

producing a plurality of samples of biochemicals, each sample being produced by means of the method of any one of claims 1 to 13;

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testing each sample for agrochemical efficacy of the biochemical; and

for a sample of a biochemical showing agricultural usefulness, producing and preparing said biochemical for agricultural application.

22. A method in accordance with claim 20 or claim 21 wherein said testing step includes directly applying an identification analysis method to each sample and thereafter performing efficacy tests on identified biochemical components of said samples.

23. A method in accordance with claim 22 wherein said step of applying an identification analysis method comprises applying mass spectrometry analysis to each sample.

24. A method in accordance with claim 22 wherein said step of applying an identification analysis method comprises applying chromatographic analysis to each sample.

25. A method in accordance with any preceding claim wherein said positioning step places the microorganism with access to a medium providing conditions for a

secondary metabolism pathway to be established, said biochemical being a secondary metabolite of said microorganism.

5        26. Apparatus for producing a biochemical including:  
         storage means for storing a medium for use by a  
         microorganism;

         support means for supporting a microorganism such  
         that said microorganism has access in use to medium  
10       stored in said storage means, wherein said support means  
         is separable from medium stored in said storage means in  
         use.

         27. Apparatus in accordance with claim 26 including  
15       delivery means for delivering medium from said storage  
         means to a microorganism supported in use in said support  
         means.

         28. Apparatus in accordance with claim 27 wherein said  
20       delivery means defines a capillary pathway for delivery  
         of medium.

         29. Apparatus in accordance with claim 27 or claim 28  
         wherein said support means is arranged to segregate in  
25       use a microorganism supported thereon from medium stored

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31. Apparatus in accordance with claim 30 wherein said manipulation means is integral with said support means.